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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,480	08/18/2003	Nobuyuki Enomoto	MA-582-US	3814

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EXAMINER

TSEGAYE, SABA

ART UNIT	PAPER NUMBER
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2467

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12/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/642,480	Applicant(s) ENOMOTO ET AL.	
	Examiner SABA TSEGAYE	Art Unit 2467	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-84 is/are pending in the application.
- 4a) Of the above claim(s) 4-10, 15-30, 34-40, 45-57, 60, 63, 66-71, 79 and 84 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 11-14, 31-33, 41-44, 58, 59, 61, 62, 64, 65, 72-78 and 80-83 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed 09/09/09. Claims 1-3, 11-14, 31-33, 41-44, 58, 59, 61, 62, 64, 65, 72-78 and 80-83 are pending. Currently no claims are in condition for allowance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 11-13, 31-33, 41-43, 58, 59, 61, 72 and 80-83 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that s the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not describe only one such spanning tree is used by any node at any time.

Claim Rejections - 35 USC § 102

3. Claims 1, 2, 14, 31, 32, 44, 58, 62, 72, 74-76, 78 and 80-83 are rejected under 35 U.S.C. 102(b) as being anticipated by Aggarwal et al. (US 6,154,463).

Regarding claims 1 and 2, Aggarwal discloses a mode that configures a spanning tree over a network to which a plurality of nodes are connected, comprising:

means for generating a new spanning tree (proposed $\text{Tree}(G)$) after a network configuration change (member of join or leave events) while continuing to operate only the spanning tree (current $\text{Tree}(G)$) that existed before the configuration change (column 14, lines 54-65), and

means for switching the spanning tree to be used for forwarding to said new spanning tree only after said new spanning tree has been stable (column 15, lines 8-9).

Regarding claims 14, 44, 62 and 78, Aggarwal discloses a node that configures a spanning tree over a network to which a plurality of nodes are connected (see Figs. 1 and 2) comprising: generating a spanning tree in which each node in the network serves as a root node (CSM protocol provides symmetric multicast capability, that is, group communication with any node of a group, with each node able to be either a sender or a receiver), and forwarding a frame using a spanning tree in which the destination serves as a root node (column 4, lines 45-65; summary). Furthermore, Aggarwal discloses that Gatekeeper Router $\text{GR}(G)$ computes the Steiner tree and responsible for subsequent updates of the Steiner tree; any router can be a $\text{GR}(G)$ (column 9, line 52-column 10, line 12).

Regarding claims 31, 32, 58, 72, Aggarwal discloses a spanning tree configuration method is a network to which a plurality of nodes are connected (see fig. 8), comprising:

generating a new spanning tree (proposed Tree(G)) after a network configuration change (member of join or leave events) while continuing to operate only the spanning tree that existed before the configuration change (column 14, lines 54-65), and switching the spanning tree to be used for forwarding to the new spanning tree only after said new spanning tree has been stable (column 15, lines 8-9).

Regarding claim 74, Aggarwal discloses a spanning tree configuration method in a network to which a plurality of nodes are connected (see Fig. 8), comprising the step of:

making a new node participate in an auxiliary spanning tree only (R5 which is new node [to proposed Tree(G)]), not in an existing spanning tree (current Tree (G) solid line) when adding the new node (R5; column 14, lines 54-61).

Regarding claim 75, Aggarwal discloses a spanning tree configuration method in a network to which a plurality of nodes are connected (see Fig. 8), comprising the step of:

making a removing node (R4, R3) participate in an existing spanning tree only (current Tree(G) solid line), not in an auxiliary spanning tree (not proposed Tree (G)) when removing the node (R4, R3; column 13, lines 12-38; column 14, lines 54-61).

Regarding claim 76, Aggarwal discloses a spanning tree configuration method in a network to which a plurality of nodes are connected (see Fig. 8), comprising the step of:

creating a new tree (proposed tree) after a change using an auxiliary system (computation of proposed trees (members join and leave) can be done as a background

process), wherein the network continues to use only and existing tree while said new tree is being created, when a network configuration has changed (column 14, lines 54-61; column 15, lines 8-9).

Regarding claim 80, Aggarwal discloses a method of forming a logical topology that is used for signal transmission in a network to which a plurality of nodes are connected comprising:

generating a logical topology after a network configuration change with a signal transmission being performed using only the logical topology that existed before the network configuration change (column 14, lines 11-16), and

only after the logical topology after said configuration change has been stable, switching the logical topology to be used for signal transmission to the logical topology after said configuration change (column 15, lines 8-9).

Regarding claims 81, 82 and 83, Aggarwal discloses a node comprising: an element which generates a logical topology after a network configuration change when changing a configuration of said network to which said element belongs itself (GR(G) [which is any router can be GR(G)] stores the complete topology of its domain), with the signal transmission being performed using the logical topology in said network (column 9, line 52-column 10, line 15), and

an element which switches, only after the logical topology after said configuration change has been stable, the logical topology to be used for signal transmission to the logical topology after said configuration change (column 15, lines 8-9).

Claim Rejections - 35 USC § 103

4. Claims 3, 11-13, 33, 41-43, 59, 61, 64, 65, 73 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aggarwal et al. as applied to claim 1 above, and further in view of Sistanizadeh et al. (US 6,963,575 B1) and Larsson et al. (US 2003/0161268).

Regarding claims 3, 11, 33, 41, 59, 61, 64, 65 and 73, Aggarwal discloses all the claim limitation as stated above. Further, Aggarwal discloses that “the events triggering recomputation depend on circumstance such as, the number of join and leave events, other changes in the network or domain topology, and new information relating to traffic patterns, both in the network as well as within the multicast group G” (column 14, lines 12-16). Aggarwal, however, does not expressly disclose generating a new spanning tree at the time of a link cost change.

Sistanizadeh teaches that if Spanning-Tree Protocol **costs**/performance parameters change, the spanning-tree algorithm reconfigures the spanning-tree topology and reestablishes the link by activating the standby path (column 14, line 65-column 15 line 3).

It would have been obvious to one of ordinary skill in the art the time the invention was made to use a link cost, such as that suggested by Sistanizadeh, to the reconfiguration system of Aggarwal in order to provide a flexible and an efficient system.

Regarding claims 12, 42 and 77, Aggarwal in view Sistanizadeh does not expressly disclose that on of the criterion is a free bandwidth.

Larsson teaches using a link free bandwidth to calculate a cost (0024; 0026; 0029; 0148).

It would have been obvious to one of ordinary skill in the art the time the invention was made to use a free bandwidth as one of criterion, such as that suggested by Larsson, to the

system of Aggarwal in view of Sistanizadeh. One would have been motivated to do this because it would make the system more accessible and flexible.

Regarding claims 13 and 43, Aggarwal discloses wherein the availability status is defined as a CPU load (Gatekeeper Application monitors the group size and other group attributed for determining whether a different joining method is appropriate; column 12, lines 37-46).

Response to Arguments

5. Applicant's arguments with respect to claims 1-3, 11-14, 31-33, 41-44, 58, 59, 61, 62, 72-78 and 80-83 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues (Remarks, pages 33 and 35) that Aggarwal fails to disclose or suggest at least a node that configures a spanning tree over a network to which plurality of nodes are connected..... *a new spanning tree after a network configuration change while continuing to operate only a spanning tree the existed before the network configuration change*. Examiner respectfully disagrees. Aggarwal clearly discloses that when the computation of the new Tree is **completed**, GR effects the switch from the current tree.

Further, Applicant argues that in the present invention, switching involves a selection of a spanning tree used for forwarding, however, *only one such spanning tree is used by any node at any time*. Examiner respectfully disagrees. This limitation of the claim contains new matter. The specification does not describe *only one such spanning tree is used by any node at any time*.

Regarding claims 14, 44, 62 and 78 (Remarks, page 36), Applicant argues that Aggarwal fails to disclose or suggest a spanning tree in which each node in the network serves continually as a root node. Examiner respectfully disagrees. Aggarwal clearly discloses that any multicast

router can be a GR(G) (column 10, lines 7-8). Further more, Aggarwal, in Fig. 1, discloses a plurality of routers are connected together in an administrative domain 10. A domain is defined to be an area served by a set of cooperating routers running the same routing protocol and maintaining the complete network configuration for the domain (column 6, lines 31-34). Examiner believes that the claims, given their broad reasonable interpretation, read on the references applied.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SABA TSEGAYE whose telephone number is (571)272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on (571) 272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Saba Tsegaye
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